

REMARKS

I. Introduction

By the present Amendment, claims 1, 3, 4, and 6 have been amended. Claims 8-13 have been cancelled. Accordingly, claims 1 and 3-6 remain pending in the application. Claim 1 is independent.

II. Office Action Summary

In the Office Action of January 5, 2009, claims 3, 4, and 6 were rejected under 35 USC §112, second paragraph, as being indefinite. Claims 1 and 5 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent Application No. 2001/0034530 to Malackowski et al. ("Malackowski").

III. Rejections under 35 USC §112

Claims 3, 4, and 6 were rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Regarding this rejection, the Office Action indicates that the claims are incomplete because they depend from a cancelled claim.

By the present Amendment, Applicants have amended claims 3, 4, and 6 such that they properly depend from independent claim 1. Withdrawal of this rejection is therefore respectfully requested.

IV. Rejections under 35 USC §102

Claims 1 and 5 were rejected under 35 USC §102(b) as being anticipated by Malackowski. Regarding this rejection, the Office Action alleges that Malackowski discloses a position measuring system that includes a position indicating means that

comprises a pair of laser beam emitting means for emitting laser beams that intersect at one of a surgical field of a patient and a predetermined portion of the tool. The Office Action further alleges that the position indicating means and three-dimensional position measuring means are fixed on a common base, where a control unit controls the pair of laser beam emitting means to emit the laser beams to intersect at an intersection point of the surgical field, and wherein after the tool has been moved to the placement location, the control unit controls the pair of laser beams to emit the laser beams on the predetermined portion of tool, and where the position measuring apparatus is used for indicating a position and a direction of a surgical tool during a surgical operation. Applicants respectfully disagree.

By the present Amendment, Applicants have amended independent claim 1 to better define the invention and also to correspond to the allowable subject matter of the corresponding European Patent Application. As amended, independent claim 1 defines a position measuring apparatus for surgery that comprises:

- a position indicating means for indicating a position and a direction of a surgical tool, said position indicating means comprising a pair of laser beam emitting means for emitting respective laser beams that intersect in a plane-like manner towards a surgical field;

- a three-dimensional position measuring means for measuring a position and a direction of said surgical field and also the position and the direction of said surgical tool;

- a control unit for controlling operation of said position indicating means and said three-dimensional position measuring means,

- wherein said position indicating means and said three-dimensional position measuring means being fixed, so that relative positional relationship therebetween is constant; and

- wherein said direction for said surgical tool is given in a form of an intersection line.

The position measuring apparatus of independent claim 1 includes a position indicating means for indicating a position and a direction of a surgical tool that includes a pair of laser beam emitting means for emitting respective laser beams that intersect in a plane-like manner towards a surgical field. A three-dimensional position measuring means is provided for measuring a position and a direction of the surgical field and also the position and direction of the surgical tool, and a control unit is provided for controlling operation of the position indicating means and the three-dimensional position measuring means. According to independent claim 1, the position indicating means and the three dimensional position measuring means are fixed so that a relative positional relationship between them remains constant. Furthermore, the direction for the surgical tool is given as an intersection line.

The Office Action alleges that Malackowski discloses all the features recited in the claimed invention. Applicants' review of Malackowski, however, has revealed differences from the features recited in independent claim 1. Malackowski discloses a surgery system that includes at least one smart instrument, a computer system, and a sensor system. The sensor system is configured such that it wirelessly senses the position of at least one of the smart instruments and transmits position information to the computer system. Contrary to the assertions made in the Office Action, Malackowski does not disclose a laser beam emitting means. Reference numeral 1202 of Malackowski corresponds to multiple position sensors and not a laser beam emitting means. Malackowski specifically indicates that a sensor array 112 is provided with a plurality of position sensors 1202 and a plurality of transceivers 1204. The position sensors contain their own calibration information which allows a localizer 1006 to be placed away from the sensor array 112. See paragraphs [0097] and [0098]. The position sensors can be in the form of linear

CCD cameras that are adapted to detect infrared signals generated by the smart instruments. However, there is no disclosure or suggestion for configuring these position sensors to emit laser beams that would be capable of indicating a position or direction. Applicants further note that the infrared sensors 1204 disclosed by Malackowski are light receiving means that function to receive infrared data generated by the smart instrument. Consequently, the infrared transceivers cannot emit laser light to indicate position or direction. Accordingly, Malackowski fails to provide any disclosure or suggestion for features recited in independent claim 1 such as:

a position indicating means for indicating a position and a direction of a surgical tool, said position indicating means comprising a pair of laser beam emitting means for emitting respective laser beams that intersect in a plane-like manner towards a surgical field;

a three-dimensional position measuring means for measuring a position and a direction of said surgical field and also the position and the direction of said surgical tool;

a control unit for controlling operation of said position indicating means and said three-dimensional position measuring means,

wherein said position indicating means and said three-dimensional position measuring means being fixed, so that relative positional relationship therebetween is constant; and

wherein said direction for said surgical tool is given in a form of an intersection line.

It is therefore respectfully submitted that independent claim 1 is allowable over the art of record.

Claims 3-6 depend from independent claim 1, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 1. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

V. Conclusion

For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a Notice of Allowance is believed in order, and courteously solicited.

If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

AUTHORIZATION

Applicants request any shortage or excess in fees in connection with the filing of this paper, including extension of time fees, and for which no other form of payment is offered, be charged or credited to Deposit Account No. 01-2135 (Case: 520.43276X00).

Respectfully submitted,
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